

WHAT IS CLAIMED IS:

5 1. A display device comprising:
a plurality of pixels, wherein a polarity of a video signal to be input into the plurality of pixels is inverted, thereby resulting in brightness of the plurality of pixels being changed.

10 2. A display device according to claim 1, wherein said display device is a light emitting device.

15 3. A display device according to claim 1, wherein said display device is one selected from the group consisting of a video camera, an image reproduction apparatus, a head mount display, a portable telephone, and a portable information terminal.

20 4. A display device comprising:
a plurality of pixels; and
a source signal line driver circuit,
wherein said source signal line driver circuit comprises a switching circuit for switching a polarity of an output signal, and
a polarity of a video signal input to said switching circuit is inverted by means of a shift signal to be input into said switching circuit and a resultant signal is then input into said plurality of pixels.

25 5. A display device according to claim 4, wherein:
said switching circuit comprises an inverter, a first analog switch, and a second analog switch,
said video signal input into said switching circuit is input into an input terminal of said first analog switch through said inverter,

said video signal input into said switching circuit is input into an input terminal of said second analog switch,

said shift signal is input into a first control input terminal of said first analog switch and a second control input terminal of said second analog switch,

5 a signal obtained by inverting a polarity of said shift signal is input into a second control input terminal of said first analog switch and a second control input terminal of said first analog switch, and

signals output from output terminals of said first analog switch and said second analog switch are output from said switching circuit.

10 6. A display device according to claim 4, wherein:

said switching circuit comprises an inverter, a first NAND, a second NAND, and a NOR,

15 said first NAND is supplied with said video signal through said inverter and said shift signal,

said second NAND is supplied with said video signal and a signal obtained by inverting a polarity of said shift signal,

a signal output from said first NAND and a signal output from said second NAND are input into said NOR, and

20 a signal output from said NOR is output from said switching circuit.

7. A display device according to claim 4, wherein said display device is a light emitting device.

25 8. A display device according to claim 4, wherein said display device is one selected from the group consisting of a video camera, an image reproduction apparatus, a head mount display, a portable telephone, and a portable information terminal.

9. A display device comprising:

a plurality of pixels, each comprising a light emitting element; and
a source signal line driver circuit,

wherein said source signal line driver circuit comprises a shift register, one or more
latches, and a switching circuit, and

5 a polarity of a digital video signal input from said one or more latches into said
switching circuit is inverted by means of a shift signal to be input into said switching circuit
and a resultant signal is then input into the plurality of pixels.

10. A display device according to claim 9, wherein:

10 said switching circuit comprises an inverter, a first analog switch, and a second
analog switch,

said video signal input into said switching circuit is input into an input terminal of
said first analog switch through said inverter,

15 said video signal input into said switching circuit is input into an input terminal of
said second analog switch,

said shift signal is input into a first control input terminal of said first analog switch
and a second control input terminal of said second analog switch,

20 a signal obtained by inverting a polarity of said shift signal is input into a second
control input terminal of said first analog switch and a second control input terminal of said
first analog switch, and

signals output from output terminals of said first analog switch and said second
analog switch are output from said switching circuit.

11. A display device according to claim 9, wherein:

25 said switching circuit comprises an inverter, a first NAND, a second NAND, and a
NOR,

said first NAND is supplied with said video signal through said inverter and said
shift signal,

said second NAND is supplied with said video signal and a signal obtained by inverting a polarity of said shift signal,

a signal output from said first NAND and a signal output from said second NAND are input into said NOR, and

a signal output from said NOR is output from said switching circuit.

12. A display device according to claim 9, wherein said display device is a light emitting device.

13. A display device according to claim 9, wherein said display device is one selected from the group consisting of a video camera, an image reproduction apparatus, a head mount display, a portable telephone, and a portable information terminal.

14. A display device comprising:

a plurality of pixels, each comprising a light emitting element, and

a source signal line driver circuit,

wherein said source signal line driver circuit comprises a shift register, one or more latches and a switching circuit,

a polarity of a digital video signal input from said one or more latches into said switching circuit is inverted by means of a shift signal to be input into said switching circuit and a resultant signal is then input into the plurality of pixels, and

an average of a time period during which all of the light emitting elements emit light in one frame period is equal to or less than a half of the maximum value of the time period during which all of the light emitting elements emit light in one frame period.

15. A display device according to claim 14, wherein:

said switching circuit comprises an inverter, a first analog switch, and a second analog switch,

said video signal input into said switching circuit is input into an input terminal of said first analog switch through said inverter,

said video signal input into said switching circuit is input into an input terminal of said second analog switch,

said shift signal is input into a first control input terminal of said first analog switch and a second control input terminal of said second analog switch,

a signal obtained by inverting a polarity of said shift signal is input into a second control input terminal of said first analog switch and a second control input terminal of said first analog switch, and

signals output from output terminals of said first analog switch and said second analog switch are output from said switching circuit.

16. A display device according to claim 14, wherein:

said switching circuit comprises an inverter, a first NAND, a second NAND, and a NOR,

said first NAND is supplied with said video signal through said inverter and said shift signal,

said second NAND is supplied with said video signal and a signal obtained by inverting a polarity of said shift signal,

a signal output from said first NAND and a signal output from said second NAND are input into said NOR, and

a signal output from said NOR is output from said switching circuit.

17. A display device according to claim 14, wherein said display device is a light emitting device.

18. A display device according to claim 14, wherein said display device is one selected from the group consisting of a video camera, an image reproduction apparatus, a head mount display, a portable telephone, and a portable information terminal.

19. A display device comprising:
a plurality of pixels, and
a source signal line driver circuit,
wherein among a digital video signal to be input into said source signal line driver
5 circuit, only more significant bits are input into said plurality of pixels.

20. A display device according to claim 19, wherein said display device is a light
emitting device.

21. A display device according to claim 19, wherein said display device is one
10 selected from the group consisting of a video camera, an image reproduction apparatus, a
head mount display, a portable telephone, and a portable information terminal.

22. A display device comprising:
a pixel portion comprising a plurality of pixels, and
a source signal line driver circuit comprising a shift register, a first latch, a second
15 latch, and a clock signal control circuit,,
wherein a clock signal is input into said shift register through said clock signal
control circuit to thereby output a timing signal from said shift register,

20 a video signal is input into and held at said first latch by said timing signal,
said video signal held at said first latch is input into and held at said second latch by
a latch signal,

said video signal input into and held at said second latch is input into said plurality
of pixels, and

25 said clock signal control circuit reduces the number of bits of said digital video
signal to be input into and held at said first latch by supplying a constant fixed electrical
potential instead of said clock signal to said shift register for a constant period of time.

23. A display device according to claim 22, wherein said clock signal control circuit comprises a NAND and an inverter,
a clock signal and a selection signal are input into said NAND, and
a signal output from said NAND is output from said clock signal control circuit
5 through said inverter.

24. A display device according to claim 22, wherein said clock signal control circuit comprises a first analog switch, a second analog switch, and an inverter,
a selection signal is input through said inverter into a second control input terminal
10 of said first analog switch and a first control input terminal of said second analog switch,
said selection signal is input into a first control input terminal of said first analog switch and a second control input terminal of said second analog switch,
a clock signal is input into an input terminal of said first analog switch,
a fixed electrical potential is supplied to an input terminal of the second analog
15 switch, and
signals output from output terminals of said first analog switch and said second analog switch are output from said clock signal control circuit.

25. A display device according to claim 22, wherein said display device is a light
20 emitting device.

26. A display device according to claim 22, wherein said display device is one selected from the group consisting of a video camera, an image reproduction apparatus, a head mount display, a portable telephone, and a portable information terminal.

27. A display device comprising:
a pixel portion comprising a plurality of pixels, and
a source signal line driver circuit comprising a shift register, a first latch, a second
25 latch, and a timing signal control circuit,

wherein a timing signal output from said shift register is input into said first latch through said timing signal control circuit,

a video signal is input into and held at said first latch by said timing signal input into said first latch,

5 said video signal held at said first latch is input into and held at said second latch by a latch signal,

said video signal input into and held at said second latch is input into said plurality of pixels, and

10 said timing signal control circuit reduces the number of bits of said video signal to be input into and held at said first latch by supplying to said first latch a constant fixed electrical potential instead of said timing signal output from said shift register for a constant period of time.

28. A display device according to claim 27, wherein said timing signal control circuit comprises a NAND and an inverter,

15 a timing signal and a selection signal are input into said NAND, and

a signal output from said NAND is output from said timing signal control circuit through said inverter.

20 29. A display device according to claim 27, wherein said timing signal control circuit comprises a first analog switch, a second analog switch, and an inverter,

25 a selection signal is input through said inverter into a second control input terminal of said first analog switch and a first control input terminal of said second analog switch, the selection signal is input into a first control input terminal of said first analog switch and a second control input terminal of said second analog switch,

said timing signal is input into an input terminal of said first analog switch,

a fixed electrical potential is supplied to an input terminal of said second analog switch, and

signals output from output terminals of said first analog switch and said second analog switch are output from said timing signal control circuit.

30. A display device according to claim 27, wherein said display device is a light emitting device.

31. A display device according to claim 27, wherein said display device is one selected from the group consisting of a video camera, an image reproduction apparatus, a head mount display, a portable telephone, and a portable information terminal.

32. A display device comprising:
a pixel portion comprising a plurality of pixels, and
a source signal line driver circuit comprising a shift register, a first latch, a second latch, and a start pulse signal control circuit,

wherein a start pulse signal is input into said shift register through said start pulse signal control circuit to thereby output a timing signal from said shift register,
a video signal is input into and held at said first latch by the timing signal,
said video signal held at said first latch is input into and held at said second latch by a latch signal,

said video signal input into and held at said second latch is input into said plurality of pixels, and

said start pulse signal control circuit reduces the number of bits of said video signal to be input into and held at said first latch by supplying to said shift register a constant fixed electrical potential instead of said start pulse for a constant period of time.

33. A display device according to claim 32, wherein said start pulse signal control circuit comprises a NAND and an inverter,

a start pulse signal and a selection signal are input into said NAND, and

a signal output from said NAND is output from the start pulse signal control circuit through said inverter.

34. A display device according to claim 32, wherein said start pulse signal control circuit comprises a first analog switch, a second analog switch, and an inverter,

a selection signal is input through said inverter into a second control input terminal of said first analog switch and a first control input terminal of said second analog switch,

said selection signal is input into a first control input terminal of said first analog switch and a second control input terminal of said second analog switch,

a start pulse signal is input into an input terminal of said first analog switch,

a fixed electrical potential is supplied to an input terminal of said second analog switch, and

signals output from output terminals of said first analog switch and said second analog switch are output from said start pulse signal control circuit.

35. A display device according to claim 32, wherein said display device is a light emitting device.

36. A display device according to claim 32, wherein said display device is one selected from the group consisting of a video camera, an image reproduction apparatus, a head mount display, a portable telephone, and a portable information terminal.

37. A display device comprising:

a plurality of pixels comprising a plurality of light emitting elements, and
a monitoring light emitting element,

wherein a variation in a current to flow through said plurality of light emitting elements is reduced by means of temperature characteristics of said monitoring light emitting element.

38. A display device according to claim 37, wherein said display device is a light emitting device.

39. A display device according to claim 37, wherein said display device is one selected from the group consisting of a video camera, an image reproduction apparatus, a head mount display, a portable telephone, and a portable information terminal.

40. A display device comprising:
a pixel portion comprising a plurality of pixels, each pixels having a thin film transistor and a light emitting element;

a power source line;
a buffer amplifier;
a monitoring light emitting element; and
a constant current source,

wherein each of said monitoring light emitting element and said light emitting element comprises a first electrode, a second electrode, and an organic compound layer interposed therebetween,

said first electrode of said monitoring light emitting element is connected to said constant current source, and connected to a non-inverted input terminal of said buffer amplifier,

an output terminal of said buffer amplifier is connected to said power source line, and

an electrical potential of said power source line is applied to said first electrode of said light emitting element through said thin film transistor.

41. A display device according to claim 40, wherein said display device is a light emitting device.

42. A display device according to claim 40, wherein said display device is one selected from the group consisting of a video camera, an image reproduction apparatus, a head mount display, a portable telephone, and a portable information terminal.

5 43. A display device comprising:

a pixel portion comprising a plurality of pixels, each pixels having a thin film transistor and a light emitting element;

a power source line;

a buffer amplifier;

10 a monitoring light emitting element;

a constant current source; and

an adding circuit,

15 wherein each of said monitoring light emitting element and said light emitting element comprises a first electrode, a second electrode, and an organic compound layer interposed therebetween,

said first electrode of said monitoring light emitting element is connected to said constant current source, and is connected to a non-inverted input terminal of the buffer amplifier,

20 an output terminal of said buffer amplifier is connected to an input terminal of said adding circuit,

an output terminal of said adding circuit is connected to said power source line,

a constant potential difference is maintained between said input terminal and said output terminal of said adding circuit, and

25 an electrical potential of said power source line is applied to said first electrode of said light emitting element through said thin film transistor.

44. A display device according to claim 43, wherein said display device is a light emitting device.

45. A display device according to claim 43, wherein said display device is one selected from the group consisting of a video camera, an image reproduction apparatus, a head mount display, a portable telephone, and a portable information terminal.

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